

ABSTRACT OF THE DISCLOSURE

The present invention relates to an optical modulator array that uses stepped-well continuously tunable quantum well infrared modulators in order to accomplish electronic beam modulating. The present invention involves a coherent optical beam modulating device to steer an optical beam comprising: an optical modulator array, where said optical modulator array includes a stepped quantum well doped with electrons, wherein the modulator array affects operates as at least one of a phase modulator and a light intensity modulator base upon a voltage bias applied across the modulator array. The continuous tunable quantum well modulator includes asymmetry of the unit cell that allows transitions from the ground state to the second excited state that are normally forbidden in symmetrical quantum well infrared photodetectors.